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GE TO BUILD IMPROVED LANDSAT SATELLITE

The General Electric Company's Space Division, Philadelphia, has signed a \$77 million contract with NASA to build Landsat-D, the most advanced Earth resources monitoring satellite system to date.

The incentive contract cost includes a \$5 million fee with additional earnings of up to \$4.3 million depending upon how well the system performs once the satellite is in orbit.

Scheduled for launch in the fall of 1981, Landsat-D is the fourth in a series of experimental satellites designed to explore the Earth from more than 640 kilometers (400 miles).

In addition to the multi-spectral scanner (MSS) carried by the first three Landsats, Landsat-D will carry a sensor known as the thematic mapper (TM) which will provide a spatial resolution approximately three times as detailed as its predecessor multi-spectral scanners (MSS).

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The new sensor will be able to discriminate area features as small as 0.2 acres IFOV as compared to the 1.2 acre IFOV resolution of present systems. IFOV is a technical designation for instantaneous field of view. Improved spatial resolution, along with the narrower, task-oriented spectral bands, will enable the users to extract much more detailed and timely information.

The contract also calls for a backup spacecraft; a data management system; an operations control center to be located at the NASA Goddard Space Flight Center (GSFC), Greenbelt, Md.; a transportable ground station; and a Landsat assessment system to quantify and demonstrate the advantages of the thematic mapper over the MSS.

Landsat data is primarily used for the monitoring and management of food and fiber resources, water resources, mineral and petroleum explorations and land cover and land use mapping.

The Landsat-D instruments and mission-unique equipment will be installed aboard a Multi-mission Modular Spacecraft (MMS), a general purpose Earth-orbiting satellite bus which is being developed by NASA to supply the basic functions of power, propulsion, attitude control, communications and data handling as well as the structure to accommodate a broad range of scientific and applications-type payloads. The MMS will be designed to be retrievable by the Space Shuttle.

Certain additional mission-unique equipment required by the Landsat-D mission and not furnished by NASA with the MSS are: the solar array and its drive mechanism. Tracking and Data Relay Satellite System (TDRSS) antenna, a wide band communications module and a global positioning system. The mission will utilize the TDRSS at Ku band to relay payload information to the ground station at White Sands, NM. In addition, direct transmission to the ground of wide band data at X-band and S-band (MSS only) will provide direct readout of Landsat-D data by foreign ground stations.

The TM and MSS data will be recorded at the TDRSS ground station and transmitted via Domsat satellites to the GSFC for preprocessing.

The spacecraft is scheduled to begin operation in late 1981 and will have a nominal three-year mission lifetime.

Expected to participate in the Landsat-D mission are such federal agencies as the Departments of Agriculture, Commerce, Interior and State. Also using the Landsat-D data will be a number of states and foreign governments.

The Landsat-D mission will be managed by NASA's Office of Space and Terrestrial Applications with project management at the Goddard Space Flight Center.